

FARTHER
CONSIDERATIONS
FOR THE 1608/5496
IMPROVEMENT
OF THE
TILLAGE
IN
IRELAND:

WITH
An Account of the Advantages of the
Ploughs and Methods recommended in a former
Treatise, as since proved on Tryal.

AND
Some REMARKS added for an easy Improve-
ment of the Lands now used in Tillage, and of other
Lands in this Kingdom.

By SAM. PEIRSON, A. B.

Agricola incurvo terram dimovit aratro:
Hinc anni labor: hinc patriam, parvosque nepotes
Sustinet; hinc armenta boum, meritosque juvencos.
Nec requies; quin, aut pomis exuberet annus,
Aut foetu pecorum, aut Cerealis mergite culmi:
Proventuque onerèt fulcos, atque horrea vincat.

Virg. Georg. Lib. II.

DUBLIN:

Printed by George Grierson at the Two Bibles in Essex-Street.
MDCCXXVIII.

CONSIDERATIONS

FOR THE

IMPROVEMENT

TILLAGE

AND

As a means of the Advancement of the
Agriculture of the Kingdom, and of the
Improvement of the Soil.

By SAMUEL JOHNSON, A.B.
Author of the Dictionary, and of other
Works.

LONDON:
Printed by J. JOHNSON, in Pall-mall.
1791.

Price 1s. 6d.



SOME FARTHER
CONSIDERATIONS
FOR THE
IMPROVEMENT
OF THE
Tillage in Ireland, &c.



THE difficult Reception of any Alteration in Custom and long Practice, notwithstanding the admitted Necessity of it, makes me willingly preface this Addition to a former

Treatise, with an Account of the demonstrated Success and apparent Gain in Tillage, by the Use of the Ploughs recommended in that proposed Improvement,
and

and the rather because the certain Proof of Profit will allure the industrious Husbandman again to practise Tillage, as the want of some reasonable Return has evidently at this time forced almost an entire Neglect and Disuse of it; for this Reason, and thereby to give the fuller Information to the Publick, I put this Improvement on tryal to an open View at the Lands of *Ardrass*, about ten Miles from *Dublin*, in the Middle of the County of *Kildare*, a known Corn Country, and its Inhabitants remarkable Ploughmen; I believe it may suffice here, without repeating the Ways of the Tillage, to observe, that there was about seventeen Acres plowed and sowed with Wheat, with the Ploughs, and in the before-directed Method; so that the Expence saved was soon evident and agreed to, and this Work was done by People bred in that Country, and but then newly instructed.—— The neighbouring Farmers frequently view'd and made their Observations of the growing Crop, and agreed that its Appearance promised well, that the Furrows and Ridges were all filled with even Corn, and that it was surprizingly clean and free from Weeds.

The

The Produce of Farms in that Country, and I have heard generally so through the Kingdom this last Harvest, is agreed to be in the common Run little more than four Barrels of Wheat on an Acre, one Acre with another through a Farm. The Crop at *Ardrass* produced something more than eight Barrels and a Half an Acre, as appeared after Threshing; the Grain was large, and far exceeded any in the Neighbourhood in Colour, Fulness and Weight: The Neighbours so much coveted it for Seed, that they carried it from the Barn as fast as it cou'd be threshed, and paid three and four Shillings a Barrel more for it than they at that Time fold their own Corn for, after the Expence of ten or twelve Miles Carriage to the Market of *Dublin*, where too great and extravagant Prices are always paid for Corn, and very much greater Rates must be paid, whenever a Supply of Wheat and Flower from *England* fails us. Something of this may be fear'd now; for not long since we heard, that the usual Export from one Part of that Country was opposed; whoever considers the Price of Wheat at *Beare Quay, Lond.* from 37 Shill.

to 48 Shillings a Quarter, will conclude, that if we are supplied it must be at a very dear Rate; the Export Præmium ceases, whenever the Price rises above 40 Shillings a Quarter. I imported from *London* about two Years since some Wheat for Seed, which cost there 48 Shillings the Quarter, and I found that with the Expences of Freight, Exchange, &c. it cost above 30 Shillings a Barrel Water-measure, which is two Pecks less than our Barrel.

The common Calamity we lye under by the Uncertainty of a Supply, and the great Demands this Kingdom must answer for it, shou'd sensibly press on some Care and Consideration to prevent such known Disadvantages.

If it be allow'd that the bad and expensive Methods of Plowing hitherto used, have discouraged Tillage, and that it will yield an encouraging Profit when followed in the recommended Method, as I think the Experience of the last Year's Crop at *Ardras*, and the now flourishing Appearance of about forty Acres of Wheat, this Year there sowed in the same way, plainly shew: And the neighbouring Gentlemen

men and Farmers agree to its apparent Profit, and desire to get the Ploughs and Persons able to use 'em; How easily then may this Country be relieved, and abundantly supply its Self?

As for making the Ploughs, that Difficulty has been with some Trouble and Expence got over. I call it a Difficulty, because I cou'd not get 'em made right, tho' attempted by the best Workmen here in *Dublin*, but was forced to fix up a Forge on purpose in the Country, where I had the Ground to try the Faults, and the joined Skill of the Smith, Ploughmaker, and Ploughman on the Spot ready to direct and amend them.

As to Ploughmen, its not in the Power of any Words I know without some Practice to convey a necessary Instruction to 'em, otherwise I most readily would publish it. I am certain by Experience that I cou'd in a very little time make a Person of the slowest Apprehension, a sufficient working Ploughman, for when plain Directions suited to such Work are practically given him, the different Goings and Alterations in the Sett of the Plough by Experiment shewed him, and the Reasons
of

of every part of the Labour distinctly impressed on his Mind, three or four Days Practice with Inspection will make him fit to work. I shall herein after mention how by a reasonable Encouragement the recommended Method of Plowing, may be brought into general Practice, for I am convinc'd by the many Applications made to me, for the Ploughs and Ploughmen, that it wou'd be soon generally followed, if they were supplied. The Improvement and Advantage in plowing cannot be denied on Tryal of the recommended Methods: I mention one farther Instance of it.

In a little time after publishing my former Treatise I prevailed on some Farmers about *Newcastle* in the County of *Dublin*, to plow about two Acres in each of their Farms into Setts, at the first and second Plowings, and to cut the Land as truly as they could with their Ploughs, as in the recommended Method, they immediately discovered that it made the Land work much finer, and that the Draught on their Cattle was easier, by giving the first thorough Plowing; and that all the other Plowings were sooner done, than they could any way expect, and I have had the

Satisfac-

Satisfaction since to find by them that the Land so plowed (tho' but of equal Goodness with the rest) produced this last Harvest considerably more and better Corn, than any Part of their Land plowed in the old Method, and several others on that Conviction have plowed all their Wheatland this Year in the recommended Method, and will readily go into the full Improvement, when they can get the Ploughs and Ploughmen.

In my former Book I considered the Errors of the common Way of plowing for Wheat, and proposed Methods for its Improvement: In this Addition to it, I will now consider the Reason of the small Encrease in the Spring Crops, and point it out in the Errors of the present plowing for them, and offer a Method for their Amendment, by which the Farmer may have an advantageous Gain.

I shall speak only to the plowing and sowing of Oats, because that is the usual Crop after Wheat, unless in some particular Lands, and its what I agree they must yet continue in, for the bad plowed, stiff, unbroken Clay, can't be reduced, and fertilized, in the plowings for one Spring
B
Crop,

Crop, to a necessary Fineness for Barley, tho' they may do for Oats.

The Dependance the poor Country Labourer and his Family have on Oatmeal for their Support, since Bread Corn is dear, is another Reason why I speak to Oats only, and I have been well informed that most of the old Farmers declare they will leave off Spring Crops, because they have so little Increase in Oats, which they know their Land is most fit for. — I must remark to such Farmer, that the sole Reason of his small Encrease is bad plowing, or rather no plowing, the Land is either tumbled over in Lumps, or raised in large unbroken Clods, so that the wanted Nourishment for the Grain, lyes as it were locked up in 'em; the Land wants frequent plowing and harrowing, to open and give it an Opportunity of imbibing from the Air and Showers, such Virtues as the late Crop of Wheat had taken from it, whereby the Earth so broke and exposed to the Air would become mellow, and fit to support the Grain; all this Error will best appear on a View of the present Method of plowing for Oats, which is thus, — In the beginning of *January*, they break down
into

into the Furrows with four goings of the Plough, the last Harvest Wheat-ridge, which was made up by six goings, and by that make the Ridge for the Oats.

The Height from the top of the Wheat-ridge to the Furrow is six Inches, though there is not above four Inches of that stirred Earth, as was shewed in my former Treatise.

They at this plowing go by Necessity as deep in that Ridge as the old Furrow lay, because the Middle of the old Ridge is to be the new Furrow; by this Method the Oats which fall on the new Furrow, (which is near a third part of the Land) will have no good Earth below them for their Nourishment, but meet a cold barren Clay and never grow, that part of the Land lyes naked and lost to that Crop, as may be plainly seen after the first coming up of what Corn grows,

Another Error is thus,

The only good Mold which was shov-
ed up and lay at the tops of the Wheat-
ridges, (as proved before) is in this Me-
thod tumbled into the bottom of the old
Furrow, and buried under at least two In-
ches of an unprepared Clay or Earth that

is raised by the Ploughs going two Inches deeper in the middle of the old Wheat-ridge than there was stirred Earth, as just now mentioned.—— After this bad Usage, it can't well be called plowing, the Land lyes thus till Seed-time, they then give it a common harrowing, and sow two Barrels of Oats on an Acre.

The Crop comes up in Rows and Spots, as the Seed casually fell on the good Earth, but no where appears even and regular; and a great part of what by a small Supply of Earth can at first make a faint Shoot, dwindles into a weak Straw and empty Ear, for want of a full Support.—— The Jackdaws and Crows pretty constantly attend the Seed-time of this Husbandry, for undoubtedly a great part of the Seed lyes naked on the unbroken Clods and Furrows, and is ready for their Use, and I believe the Farmer makes allowances for this waste by the great Quantity of Seed sown, as I shall presently shew; the Remedy I propose for this, is submitted to the Farmer's Judgment in the following Method, but must give this previous Caution, that the Wheat-lands, on which the Oats are to be sown
and

and plow'd for, were used in the recommended Method.

Thus then,

As soon as the Weather permits after the beginning of *December*, break down into the Furrow the Wheat-ridge, with two goings of the Plough.—— This first half-plowing (which is no more, because that Ridge was made up with four goings) opens the Land to the Air and Frost, and turns under the Wheat-stubble, by which it the readier rots into Dung; this new-made Ridge is made hollow by the Turn in the Breast of the Plough, and lyes dry.—— 'Tis proper to remember now, that in our Wheat-furrow there was at least two Inches of stirred Mold, and that the Ridge from top to bottom was all truly plowed and fine Earth; this obviates the Objections complained of in the old Method.

When this Half-plowing is over about the latter end of *January*, harrow down level what was first done cross the new Ridges, then cross-plow them into Setts of 36 Foot broad, this is a thorough plowing, and every part of the Land is truly cut and made fine: It lyes thus till Seed-time, and is then well harrowed cross the Setts,

Setts, and only one Barrel of Oats sowed on an Acre, and lightly harrowed over to cover the Seed.

In this Method, you may depend on a Return of at least 10 or 12 Barrels an Acre, and on good Land 15. In the other Method tho' 2 Barrels are sowed they scarce get five or six.— Experience in the North of *Ireland*, where the general Crop is Oats, may confirm this Improvement; some Land there, is always used for Oats, they regularly in one plowing cut all the Ground, and the Soil being light, it by that falls fine and yields a profitable Encrease.

In this recommended Way, there is an Appearance of more Labour and Expence than in the present Method; but it will prove otherwise in our once well plow'd Lands for the Wheat Crops, for then the Plough runs presently through it, only 3 Horses are used in each plowing, and they go near an Acre a Day.

I must now confess that I am a little curb'd in publishing what I intended a Part of this Addition to my first Treatise, viz. my Observations and Experiments, on the Nature and Improvement of Soils
in.

in general, and of their Improvement of each other. I have lately read some Books published by Mr. *Bradley* under the Titles of *A General Treatise of Husbandry and Gardening*, and *the Farmer's Monthly Director*, and find that in one part or other of his Books, he touches on the same things with me, and that we have thought pretty near the same Way: His Opinion and Observation of Soils, is related in several Places of his Books, as that large Field of *General Husbandry and Gardening* gave him Occasion to mention them, but not in any close Method, with particular Regard to Corn Crops, or of the Improvement which this Country wants; they are interspersed in different Places both in *Gardening* and *Husbandry*, and have many References to his other Books—— I agree they are well writ, with Judgment and Knowledge, but I fear it will be little Information to the Farmers in this Country (whom I would willingly help) to direct 'em to search his Books for Instruction; the Improvements there, are too widely branched for their Reach: When I have made this Acknowledgment in justice to Mr. *Bradley*, that I am forced to speak
some

some, tho' not many, things which he has already published, I will rather venture for the publick Service to be thought *Fidus Interpres* a Faithful Transcriber, than omit adding such Observations as I am sure will help the Farmer in this Country to a better Increase, and as such the more encourage *Tillage*.

The Lands generally used under the Plough for Wheat, which lye near the Market of *Dublin*, as I mentioned in my former Treatise, are stiff Clay Soils.

In these stiff Soils there is an excellent prolifick Vertue, they abound in vegetable Riches; but by means of an oily or rather viscous Quality which is in'em, the parts are so closely bound together, that they cannot act unless they are opened, and these strong Soils in wet Seasons ruin Corn.

Such clay Ground, as it happens to be more or less stiff and heavy, shou'd have more or less of a Manure of a light, loose, and opening Nature, mixed with it by frequent plowings, &c. as are all Turf Mold, Gravel or sandy Soils; for their Sharpness will open the parts of the Clay, and make that stiff Soil mellow: Thus one Soil may be improved by the other,
the

the stiff Clay by being intermixed with the lighter Soils, and the Ground of a contrary Nature, by bringing to it the stronger and stiffer Land.

Such light Soils are fit for some Crops by common plowing only, such as Rye and Messin, in such Land where there is a little natural Mixture of a brittle yellowish Clay, which yet may be called a light Ground, Oats or Turnips may be sowed to Advantage.

I omit mentioning the advantageous Crops that such Lands will bear, as *Saffron*, &c, directed by Mr. *Bradley*, because its chiefly my Design, that we may first have Bread Corn sufficient, and then let the diligent Husbandman try other Crops as his Soil will bear, and choose that which lyes to his best Market.

My Thoughts on improving Soils, have been chiefly engaged in considering that which will be of the most general Use to that End in this Kingdom.

And first to help the Lands now plowed,

I advise the Mixtures before mentioned for such Lands, some of which will pretty generally be found in one part or
C other

other of every Farm, or very near it; if not, Lime, Sea-sand or Coal-ashes may perhaps be got, and either of 'em will answer: These Lands may be greatly helped by the Backs of old Ditches or any Earth, Mooring or House-rubbish, with a little Lime properly mixed with them: I propose this Compost to be made in any Place convenient to the Land, its to be laid on thus,

Let the Mooring, House-rubbish, Earth or any Lumps of Clay that a Spade can break, be laid 8 Inches thick in a broad Heap, over this, put a Layer 3 Inches thick of Lime or Sea-sand, which ever can be easiest had, or common Sand if the others can't be got, and thus *stratum super stratum* till you have a Quantity sufficient for your Use, this Heap must lye at least a Month, and is then to be turned and trenched for the better Mixture: I recommend these Manures, to be used in the same Method as I shall direct in the Improvement of some Soils in *Ireland*, which I shall presently mention.

Ditches made in direct and strait Lines will the readier carry away the Water, which the necessary Drains made in such Lands

Lands convey to them; the crooked Ditches that are now on such Grounds, very often do Damage by Stoppages at their several Turns before its seen, and at best, they create Expence in opening them, in my Opinion it will answer the Expence to alter them, for such Part of the old Ditches as is thrown down will be excellent Land. I am informed in many Parts of *Ireland* there are great Tracts of very deep stiff clay Land which lye near the Turf Boggs, and are not now used in *Tillage*, but are unimproved and almost waste, such Lands appear sowre and wet in Winter, and burnt and crack'd in Summer; Heat or Rain forces these Extreams, and they yield a poor hungry Herbage unprofitable blewish Grass.

I propose to improve these Lands by frequent plowings, to reduce and lay open the stubborn Clay to the Air, and then to intermix with them a Manure one great part of which their Situation can abundantly and cheaply supply, to wit, the common Turf-bog Mold.

The other part of the Manure is Lime, where it can be had cheap, in this Situation it may be burnt by the Turf at an

easy Rate, if the Lime Stone can be found.

If Lime can't be had, Sand or Gravel may be used instead of it, but if Sea-sand can be reasonably got, it is equal to Lime if rightly chosen—— It may be of use to direct the Choice of it, that Sand is richest which has the fewest Particles of real Sand in it, but is full of Shells, broke so small, that they appear to the naked Eye as Particles of Sand, and this may be discovered by a magnifying Glass, and sometimes the Shells are large enough for common View.

I am now to direct, how such Soils and Manures may be intermixed to a beneficial Improvement; but it may be proper first to give this little Direction for preparing the Turf Mold.

Let a cutting Spade be so shaped that it may raise the Turf Soil thin and broad, that it may the sooner dry and loosen into Mold, let it be thrown up in broad Heaps like Potatoe Ridges round the Turf-pits, and dig it as early in the Year as the Weather will permit.

When it is dry and fit for Carriage, it may be removed and laid in a large Heap
near

near the Land where it is to be used, in the Spring following; if the Summer Heats have not fully loosen'd it into Mold, in the first dry Weather in *October* let it be trenched and turned, and afterwards cover'd over with Sodds to keep off the Winter Rains: And now to the Use of it.

In the beginning of *November*, or as soon then as the Weather will let you work, begin to break up the Land with the common Plough now used, let the first plowing be about five Inches deep, and plow it into Setts of 36 Foot broad, let great Care be taken that the Ploughman goes no wider in each going of his Plough than what he truly cuts, for the Land must all be turn'd up and laid open to receive the Benefit of the Air and Frosts, and be sure let Water-cuts be immediately made to let off the Water that falls on it.

The Land is to lye thus till the end of *February*, at which time harrow it down well cross the Setts with the large Harrow, described in my former Treatise, and only harrow a Day's Work forward of the Plough, lest Rain should fall and make it poachy; if there remain some Clods after harrowing, as may be expected; then rowl
the

the Land with a Rowler recommended and described. This Method of Clod-breaking is far preferable to the expensive way directed by Mr. *Bradley* and *Mortimer*, and greatly helps the designed Reduction of the Clay. When you have thus harrowed and rowled, carry on the Turf-mold, and lay it in little Heaps for an equal Distribution of 320 Beer-barrels to an Acre, and so spread it; then cross-plow the first Setts in the same true Method of plowing into Setts of equal Largeness: the Plough is now to go an Inch deeper, which will be easy, so much Land being already broke.

The recommended Ploughs are now to be used for their many Advantages, and the Breast will lay the Setts in one general Hollow, each Furrow hanging on another, by which all the Rain that falls will drain off, and the Air and Sun will have the greater power over it: the Water-cuts in the Land are still to be minded. — Let the Land lye thus till the latter end of *June*, then harrow it well down cross the Ridges and use the Rowler as before; and give it the third plowing thus.

Let

Let the Plough in four goings size up a Ridge round, and little more than two Foot broad at the bottom; there is no loss of Land by the Furrows, for every Furrow has stirred Mold in it, and will yield good Corn; they are Drains to the Land. As soon as this third plowing is done, carry out 80 Barrels of unslack'd Lime, and lay it at equal Distances in Heaps, proportioning that Quantity to an Acre.

As you lay the Heaps on, cover them with some of the Mold, which will keep in the Strength of the Lime, otherwise it will be greatly spent before it is spread.— Sowe the Land as early as you can in *September*, and spread your Heaps just before the Plough; then close up the Ridges with the Foot-plough, as recommended.

In this Method you have certainly made a good and durable Soil for Tillage or Pasture, and I advise three Crops to be taken before they are laid to Pasture, that the Clay may be the more reduced by the Plough, &c. and the Manure more truly intermixed with 'em.

If such Lands are intended to be laid to Pasture, the great Profit that will arise by sowing Clover and Ray-grass on 'em with the

the last Crop may encourage every one to it, the Land will be very fit for it, and every Acre so sown will, in Pasture, equal at least three Acres of your best common Pasture-land for the first four Years. —

The Ray-grass will preserve Sheep from the Rot, and recover 'em if but a little touch'd, and very much prevents the Hazard to Cows and Bullocks of bursting by the luscious Feed of the Clover without Caution, as directed in my former Book ; but I have found by Experience since, that such Hazard may be entirely prevented by grazing the Clover before it grows too high and large in its Stems, and by turning the Cattle in at first when the Grass is dry and free from Rain.

Let the Field be laid up in *January*, and by the middle of *April* it will be about a Foot and a half high ; then turn in your Cattle of any sort, and you may graze it till the beginning of *August*, and can scarce over-stock it.

As one Acre of this Pasture will plentifully support as much Stock as three Acres of common Grass, so will it be in a treble proportion manured and benefitted by the Dung and Urine, and be thus greatly improved.

I advise 14 l. of Clover and a Bushel of Rye-grass to be sowed on an Acre in the Method in my former Book directed.

It has been commonly objected that these Grasses are only to be sown where it is intended in four Years to plow the Land again, because in that time they wear out; but this is a great Error: I agree the extraordinary Profit at that time ceases, the Rye-grass will last thirty Years in full Profit, and as the Clover wears away the natural Grass succeeds (where the Land has been rightly plow'd and laid down in some Strength, as this Land will be) and some of the Clover, though it does not grow so large, I have known continue, mixed with the natural Grass, ten Years after it was sown; but these Grasses may be revived to a full Profit, without plowing again. As thus,

About the beginning of *June* in the third Summer turn off the Stock, and let the Land be shut up, the Grass does not grow high, but will be very full of Seed, let it stand till you find most of the Seed shed, which may be about the middle of *October*, then turn in your Plow and Draft-horses, to eat up the Grass, and such Feed

will be most useful to them when they have been at full Labour, and perhaps are still hard work'd in finishing the Seed-time, and other Pasture is pretty scarce; by their treading and lying on it, the Seed that was not before shed will fall on the Land, and it will be new stock'd and planted: Crops may be this way continued in very near a full Profit for many Years.

Where such Land is intended to be plowed no more than to bring it to a good Soil and then laid to Pasture, I think it necessary, in regard to the former Nature of it before Improvement, that it be laid down in a particular Method, that the too great Quantity of Water that otherwise might stand on it in very wet Weather, may be carried off, I therefore advise the following Method.

Let the first Crop be Wheat, and sown as before directed, and the other two Crops be Oats, because the Land can't be work'd up in less than the plowings for two Crops in the same Way.

Let the plowings be thus,

For the first Year's Crop of Oats, let the Land be laid in Setts 36 Foot broad, and work'd up in the plowings (which are to be both

both one Way and never across as in the common Method) to a Rise in the middle, and on each side left in an easy gradually hanging Slope, in shape of a well made Gravel-walk, and let the Sett be laid to the advantage of any natural Fall that may be in the Land; by this the Wet will drain easily off, without Expence or Waste of Land, if it has the least natural Fall, where a Ditch may be made to receive it from the several Hollows.

For the second Year's Crop,

It must be all the same way, as it now lyes truly plowed, but no way cross it, because the Rise and Slope are to continue and be a little encreased to the proper Height, it is to be harrowed the same way the Sett lyes, and if need be rowled, it will thus be fully fine and well laid.

Improvement of Land when at too dear a rate is, in my Opinion, a false Term, and that makes me willingly compute on the nearest Supposition I can, the Expence and Profit of this Improvement; and every Person who has such Lands may either lessen or add to it, as the Lime is more or less expensive, the Rates of the Bog-mold will be much the same in most Places.

Thus then I'll suppose the Expence of an Acre improved in this Method.

	l.	s.	d.
To the several Plowings and Harrowings. —————	00	14	00
To the Rowings. —————	00	01	06
To 320 Barrels of Turf-mold, at 1 <i>d.</i> per Barr. including Carriage and Turning. ———	01	06	08
To 80 Barrels of Lime, at 3 <i>d.</i> per Barr. ——— ——— ———	01	00	00
To 3 Bush. of Wheat for Seed, at 10 <i>s.</i> per Barrel, for so I rate the Product. ——— ———	00	07	06
Rent of the Land for 2 Years, valued at 3 <i>s.</i> per Acre before improved. ——— ——— ———	00	06	00
The present Value of the Tythe. ——— ——— ———	00	04	00
Reaping, &c. ——— ——— ———	00	05	00
	04	04	08

The first Crop will produce at least 10 Barr. an Acre. ——— 05 00 00

The whole Expence is over - paid in two Years, and the Land improved at least to double Value. Ano-

Another Method proposed to improve these stiff Soils, where Lime, Sand, or Gravel cannot easily be had, is thus,

Break up the Land with the Plough as before directed, and let it lye for the same time, then harrow and rowl it well to break as much of it as possible; the Clods that remain unbroke, are then to be gathered and Heaps built up hollow, of size equal to the contiguous Lumps to be roasted, and furze Bushes laid among 'em, these Heaps are to be fired in dry Weather, and Furze laid ready at each Heap to continue this Clay roasting for about two Days; the Fire shou'd be kept as close within the Heaps as may be, after this spread out the Heaps. And the Land is to be plowed, harrowed and rowled, as in the Method just now mentioned.

Mr. *Bradley* has mentioned the burning such Land, with the small Coal that is generally at the Mouth of the Coal-mines, to be very beneficial to Persons who have Coal-mines on their Lands, he repeats a Gentleman's Experiment that way, in *Worcestershire*.

The Earth was gathered in Heaps, and the Coals spread among it which were
set

set on Fire by small Bushes of Furze, when the Heaps were well Burnt, they were spread on the Land as it was fresh plowed, and then the Wheat was sowed on it; this produced an extraordinary Crop, and by this Practice the Land which was hardly worth 10 shill. *per Acre*, is now worth 40 shill. *per Acre*, the Coal-ashes greatly help'd to divide and open the stiff Clay.

I have repeated this Improvement because it may be of great Advantage to all Lands that can have such Convenience of Coals, the Lands near the Coal-mines in the County of *Kilkenny*, and the North of *Ireland* have great Opportunity, and it may be worth while to estimate the Expence, and see whether the Profit will not answer paying some small Price for the Coal to improve Land, at an easy Distance for the Carriage.

I have observed that there are great Parcels of Land within 12 Miles of *Dublin*, entirely lost to the Publick among several of the Farms that are badly laid down, and turn'd to accidental Dairys within these last 18 Years.

It is within this time that almost every Gentle-

Gentleman in this Country that set a new Lease, restrained his Tenant from plowing; I confess he was forced to it by Necessity, to save his Land from being torn up and in three Years Time left on him with at least a Year's Arrear in the Hands of a broken Tenant.

When a Farm was left in this Condition, Plowing was at once concluded the Ruin of it, and I agree that the bad plowing it generally had, ruined both the Land and the Tenant, for he cou'd not live by the small Encrease.

Such Land lay to little or no Profit for three or four Years, and was set as part of the Farm to an accidental Dairy, as most profitable for the Fresh-butter-market of *Dublin*; it pays some Rent in this Way, but it is a Charge to the Publick, added in the dear Price of its Product, the Butter.

Every one that knows the Rents paid for such Dairy Farms near *London*, to be three times more than is paid here, will be surprized that Butter sells here in all Seasons so near the Rates paid there, when the Consumption must bear a very great Disproportion, and the Land here
in

in its self were it rightly managed is full as good.

Most of such Lands as have been plowed in that time are laid down badly and perhaps a great Part of what was last plowed is left in high Ridges and the Furrows destroyed with standing Water. I have before proved that by the present Method of Plowing, (and these Lands were that way plowed) the dead Clay is left on the Surface of the Furrows, and the sides of the Ridges, this yields nothing but an unprofitable Moss, as may be seen every Day, and on the Tops of the Ridges the only good Grass grows, if so, two Parts in Three of such Lands lye waste, and in a better Management wou'd maintain three times the Stock they now bear.

Such Farms as these may be very often met with on Inspection, and they can't be improved but by plowing, which may be done in small Quantities of about ten Acres every Year so as not to stop the Dairy.

Let such Land be broke up early in the Year, and truly fallowed and plowed as directed, for a Crop of Wheat, which it will answer well without any Manure.

After

After this Crop let it be laid down as directed with a Crop of Oats well harrowed, rowled and made fine, it will very much help the Land to Pasture soon, if a little after the Oats is sowed, you sowe about 5 Barrels of common Hay-seed on an Acre, which may be got for five pence a Barrel; and the Land must be Bush-harrowed to cover the Seeds.

Success in Husbandry depends on an exact and regular Management in every Part, and as in mechanical Movements, Art and Skill must here direct the Work: A Miscarriage gives every thing a Disrepute, and by unskilful Tryals, many useful Improvements have been lost and rejected. Most People agree, that *Ireland* greatly wants Improvement; the *Tillage* is evidently in a bad Way, and Methods for its certain Amendment to apparent Advantage, are proposed and demonstrated.

Since therefore the Benefits will be to the Publick, and that very many Gentlemen and Farmers are now ready to buy the Ploughs, &c. if they had Servants instructed in the Use of them: It is with great Deference I give this Hint,
E
whether

whether a Person capable to give the necessary Directions, might not be Employ'd at the publick Charge, whereby the common and general Good of a better Husbandry in this Country may be greatly promoted, and the recommended Methods brought into a general Practice.

I take leave to mention one thing more, which I think may be of great Service and Help to Improvement in general, by supplying from among ourselves *Protestant Husbandmen* and Servants, and at the same time make a much better Provision, than now is, for the Boys of the Charity-schools.

When a Boy on the Charity Foundation is big enough for a Trade, he is necessarily put out to make way for others that are helpless, Notice is given that a Master is wanted, this soon comes to the Knowledge of some poor Tradesman, who can scarce get Work enough to supply himself; his present Want makes him catch at the Fee of three or four Pound as usually given, and tempts him to take the Apprentice; the Tradesman makes an Appearance of Ability to the
Parish

Parish, and undoubtedly the best Care is taken that he shou'd really be so, but the Fee is so small that Risques of that kind must be run, and one or the other of the following Extreams, I fear, is but the too common Consequence; either the poor Master in a little time breaks for want of Work, before the Boy has learned his Trade, his Cloaths are worn out, and he left almost naked among Numbers in this City of Shoe-boys and News-cryers, and there exposed to the greatest Hazard of Ruin to both Soul and Body---or if this be not the Case, but the Apprenticeship be faithfully discharged on both Sides, then want of Employment for this new made Journeyman, presses hard on him, and he is forced to some common Labour to get a bare Support.

This Method of putting out Apprentices has already overstock'd the Trades that will agree to take such small Fees as can be given from the Funds of the Charity-schools, and if it be continued, they must be much more so. I'm unwilling to mention the particular Corporations whose Journeymen are so numerous and poor, 'tis probable most have observed it; for

melancholy Complaints not long since were loudly made.

That such Boys may be useful in the Husbandry and Improvement of their Country, and such Hazard of Miscarriages in the Apprenticeship, or Want of Employment after, prevented, I propose that as many of 'em as Masters can be got for, be put Apprentices to Protestant Farmers.

I suppose the Boy thirteen or fourteen Years old, and Boys of less Age hold the Plough in *England*, but at worst, such a Boy is able at some Country-work to earn his Diet, he is put out with a good full Suit of Cloaths and some Linnen, and the 4 l. paid as a Fee will keep him in repair for the first two Years, by which time he will undoubtedly be useful, and will earn a thorough Maintenance: Were others of these Boys put to Gentlemen who keep Gardeners and taken as Apprentices, they wou'd be made good Labourers at the Spade, and fit for the Husbandry of the *useful Kitchen Garden*.

In each of the various Employments of the Country, some of these Boys will be made *useful* Members of the Community, and by this means in some Years there
will

will be a Supply of Protestant Servants and Cotters.

When the Boys, who are put to Farmers, have behaved well in a faithful Apprenticeship, and are become skilful and experienced Husbandmen, how reasonably may it be expected, that every Gentleman will be glad to *Set* such a Man a small Farm on part of his Estate, and even give him Credit for a Stock to manage it; this will be a *sure* Way to improve great Estates; and thus would the *Wastes* of this Country be peopled, and flourish in a *full* and *beneficial* Husbandry, and the Protestant Interest be greatly strengthened.

The common Sailor, who goes abroad with some small Instruction in Navigation, soon becomes useful in his Judgment as well as Labour; for that Reason, I would have such Charity-boys as are intended for Husbandry, instructed a little at their Schools in that part of it, which Mr. *Bradley* truly observes, every Farmer ought to be so much a Philosopher as to know, *viz. The Nature of Soils, and the Grain fit for them.*— I would also have 'em informed of the Reasons for every plowing given the Land, the Use of draining, ditching
and

and manuring properly, and such other Instructions as might with a very little pains be collected from Mr. *Bradley*, Mr. *Mortimer*, and other Books of Husbandry, and put into a short and plain Method for their reading at School.

In this Method every Apprentice will go out prepared to begin that Work truly, which he has some Notion of, he will then be a ready Servant, and presently useful; and may remind his Master of a necessary Water-cut for his Corn-land, which Hurry made him over-look. Such an instructed Apprentice may find out for his Master, perhaps as yet uninformed in the Improvement of Soils by Mixture, a ready and convenient Manure for his stiff clay Soil, by a neighbouring Sand-bank, Lime, &c. or direct him in the Methods of roasting such Land; and, in short, put him in pursuit of such Methods as will improve his Farm, and make It and Him of greater Use to the Publick.

I shall conclude this general Observation for *promoting* the *Agriculture* of this Country, and the *better Employment* of one part of the Poor, in the Words of that true Patriot, ever forward in the Service of
his

his Country, the Right Honourable the late Lord *Molesworth*, as mention'd by him in a Treatise publish'd 1723, among other Considerations, for employing the Poor.

“ I shall venture in one Word to give
 “ my Opinion, which is this, That the
 “ whole Oeconomy of Agriculture is ge-
 “ nerally mistaken or neglected in this
 “ Kingdom.

“ Either 'tis not understood, or 'tis
 “ thought below the Consideration of the
 “ higher Ranks among us, and therefore
 “ has not been made the Care of Parlia-
 “ ments as I hope it soon will be, since
 “ there is so great a Desire to employ
 “ and provide for the Necessities of the
 “ Poor.

Nor have we pass'd untold what Arms they wield,
 Who labour Tillage, and the furrow'd Field:
 Without whose Aid the Ground her Corn denies,
 And nothing can be sown, and nothing rise. *Dryden's Virg.*

POSTSCRIPT.

POSTSCRIPT

Improvement of the many Bogs in *Ireland* is at present a pretty general Care, I have a little thought of it, but till Experience from Tryal, can't venture to publish my Opinion therein: But I think it may now be useful and of service to insert in this Treatise a Method, which if approved, will greatly help the draining them.

Stones cannot be got in such places to make *French Drains*, all Bogs greatly subside and sink in, as Vent is given them to purge out that Dropsy they are swell'd up with; this sinking presses on the sides of the Cuts and Passages opened to let off the Water, and by the breaking in of the Bog-soil the Drains are stoppt, and by that the Improvement is loaded with a constant Expence of Labour to open and remove such Obstructions, which otherwise would defeat the Work.

By repairing a Mill in *England* there were some small Pieces of *Aspin* taken up, which had lain there under Water (as was

reason-



